



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

August 27, 2013

WELL WORK PERMIT

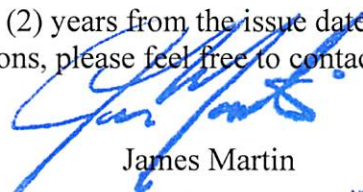
Horizontal Well

This permit, API Well Number: 47-10501369, issued to HARD ROCK EXPLORATION, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: HR-496A

Farm Name: MCCLUNG, KENNITH & ELIKA

API Well Number: 47-10501369

Permit Type: Horizontal Well

Date Issued: 08/27/2013

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Hard Rock Exploration, Inc. 494464205 Wirt Spring Creek Burning Springs, WV 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: HR-496 3) Elevation: 855'

4) Well Type: (a) Oil _____ or Gas X _____
(b) If Gas: Production X / Underground Storage _____
Deep _____ / Shallow X _____

5) Proposed Target Formation(s): Lower Huron Proposed Target Depth: 4385' TVD

6) Proposed Total Depth: 8375' TMD Feet Formation at Proposed Total Depth: Lower Huron

7) Approximate fresh water strata depths: Pittsburgh sand estimated at 600'-650'

8) Approximate salt water depths: 1825'

9) Approximate coal seam depths: None noted in offset wells

10) Approximate void depths,(coal, Karst, other): None

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Drill 12 3/8" hole on air/ Freshwater foam; Drill 8 3/4" hole on Air/Freshwater foam/Fluid; Drill Bottom hole on Air.

KOP-3785', Land curve-4735'MD/ 4385'TVD , 4250'VS, 8375'TMD

Run 4.5" casing with open hole packer completion (Depths noted at bottom) -Set packers, cement on top packer, Fracture with Nitrogen gas

13) **CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13 3/8"	LS	37#	30'	30'	NA
Fresh Water	9 5/8"	LS	26#	745'	745'	370cu-ft CTS
Coal						
Intermediate	7"	LS	19#	2135'	2135'	479cu-ft CTS
Production	4 1/2"	N-80	11.6#	8375'	8375'	130cuft
Tubing						
Liners						

Packers: Kind: Mechanical Set open hole packer

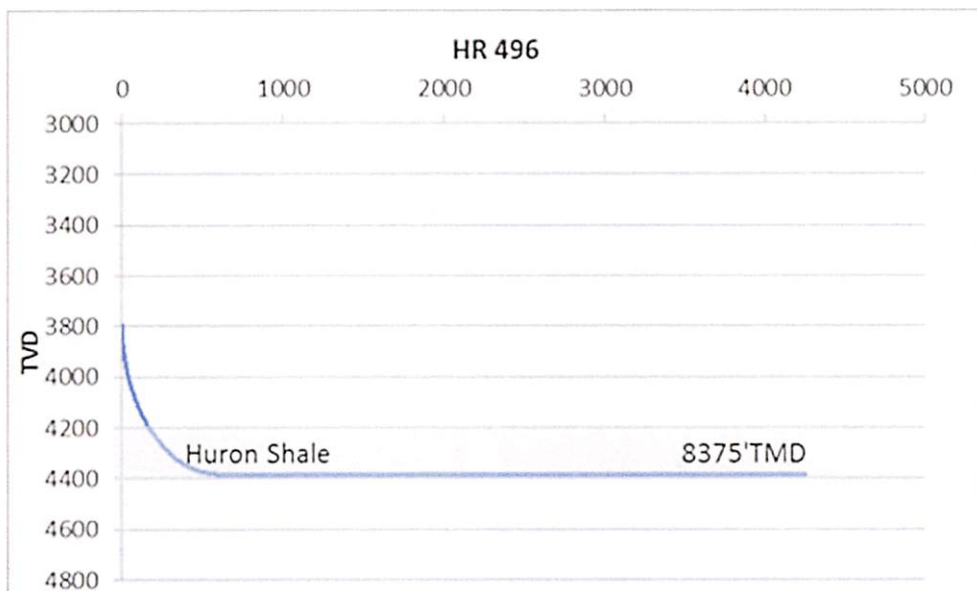
Sizes: 4.5" X 6 5/8" 10k diff Seal

Depths Set Place 17stg open hole packer system from 4225'MD- 8375' (244' spacing per stg) , 17th packer at 2450' Dump 130cuft cmt

Received
AUG 2 2013
WV Dept of Oil and Gas
Office of Environmental Protection
CMT 14580
WSD

5-1-13

NOTICE

WELLBORE GRAPH
HARD ROCK EXPLORATION WELL NO. HR-496

[Signature]
8-1-13

HARD ROCK EXPLORATION, INC.
1244 MARTINS BRANCH ROAD
CHARLESTON, WV 25312

7-25-13

Received
AUG - 2 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

105 01369 H

WW-2A
(Rev. 6-07)

1). Date: July 24, 2013
2.) Operator's Well Number HR-496
State 47- County 105 Permit 01369
3.) API Well No.: 47- 105 - 01369

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

Check # 14588
\$650.00

4) Surface Owner(s) to be served:
(a) Name Kennith & Erika McClung ✓
Address 805 Fairview Ridge
Palestine, WV 26160
(b) Name _____
Address _____
(c) Name _____
Address _____
6) Inspector Joe Taylor
Address 1470 497 Claylick Road
Ripley, WV 25271
Telephone (304)380-7469
5) (a) Coal Operator
Name None
Address _____
(b) Coal Owner(s) with Declaration ✓
Name Kennith & Erika McClung
Address 805 Fairview Ridge
Palestine, WV 26160
(c) Coal Lessee with Declaration
Name None
Address _____

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

OR Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through on the above named parties by:

 Personal Service (Affidavit attached)
X Certified Mail (Postmarked postal receipt attached)
 Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Well Operator Hard Rock Exploration, Inc.
By: Monica Farmer
Its: Executive Vice President
Address 1244 Martins Branch Road
Charleston, WV 25312
Telephone (304)984-9004

Subscribed and sworn before me this 29th day of July, 2013

Joan L. Beane Notary Public

My Commission Expires Sept. 6, 2022

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

Received
AUG - 2 2013

WV Dept. of Environmental Protection
Office of Oil and Gas

16501369H

WW-9
(5/13)

Page _____ of _____
API Number 47 - 105 - _____
Operator's Well No. HR-496

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Hard Rock Exploration, Inc. OP Code 494464205

Watershed (HUC 10) Buck Run of Spring Creek Quadrangle Burning Springs, WV 7.5'

Elevation 855' County Wirt District Spring Creek

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes _____ No X

Will a pit be used for drill cuttings? Yes X No _____

If so, please describe anticipated pit waste: Drill Cuttings

Will a synthetic liner be used in the pit? Yes X No _____ If so, what ml.? 10 or greater 2.0 mil.

Proposed Disposal Method For Treated Pit Wastes:

- ☒ Land Application
- ☐ Underground Injection (UIC Permit Number UIC2D0190460, 3416729685)
- ☐ Reuse (at API Number 8704669, 3502970, 3502987, 3502999, 8704700, 8704698, 8704703, 8704713 - Well will be noted in DMR)
- ☐ Off Site Disposal (Supply form WW-9 for disposal location)
- ☐ Other (Explain _____)

Will closed loop system be used? No

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? Soap, KCl, or Clay Stay

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Leave in pit

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) Lime

-Landfill or offsite name/permit number? _____

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Monica Stephens

Company Official (Typed Name) Monica Stephens

Company Official Title Executive Vice President

Subscribed and sworn before me this 29th day of July, 2013

Joan L. Beane Notary Public

My commission expires Sept. 6, 2022

Office of Oil and Gas
WV Dept. of Environmental Protection



Form WW-9

Operator's Well No. HR-496Proposed Revegetation Treatment: Acres Disturbed 1.22 Prevegetation pH 5.5Lime 3 Tons/acre or to correct to pH 6.5Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)Mulch Hay/Straw/Paper (Paper at 1600 lbs/acre) Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Red Top	15	Red Top	15
Orchard Grass	25	Orchard Grass	25
Perennial Rye/Crimson Red Clover	25 Each	Perennial Rye/Crimson Red Clover	25 Each
Annual Rye	40	Annual Rye	40

Attach:

Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: 

Comments:

Title: InspectorDate: 8-1-13

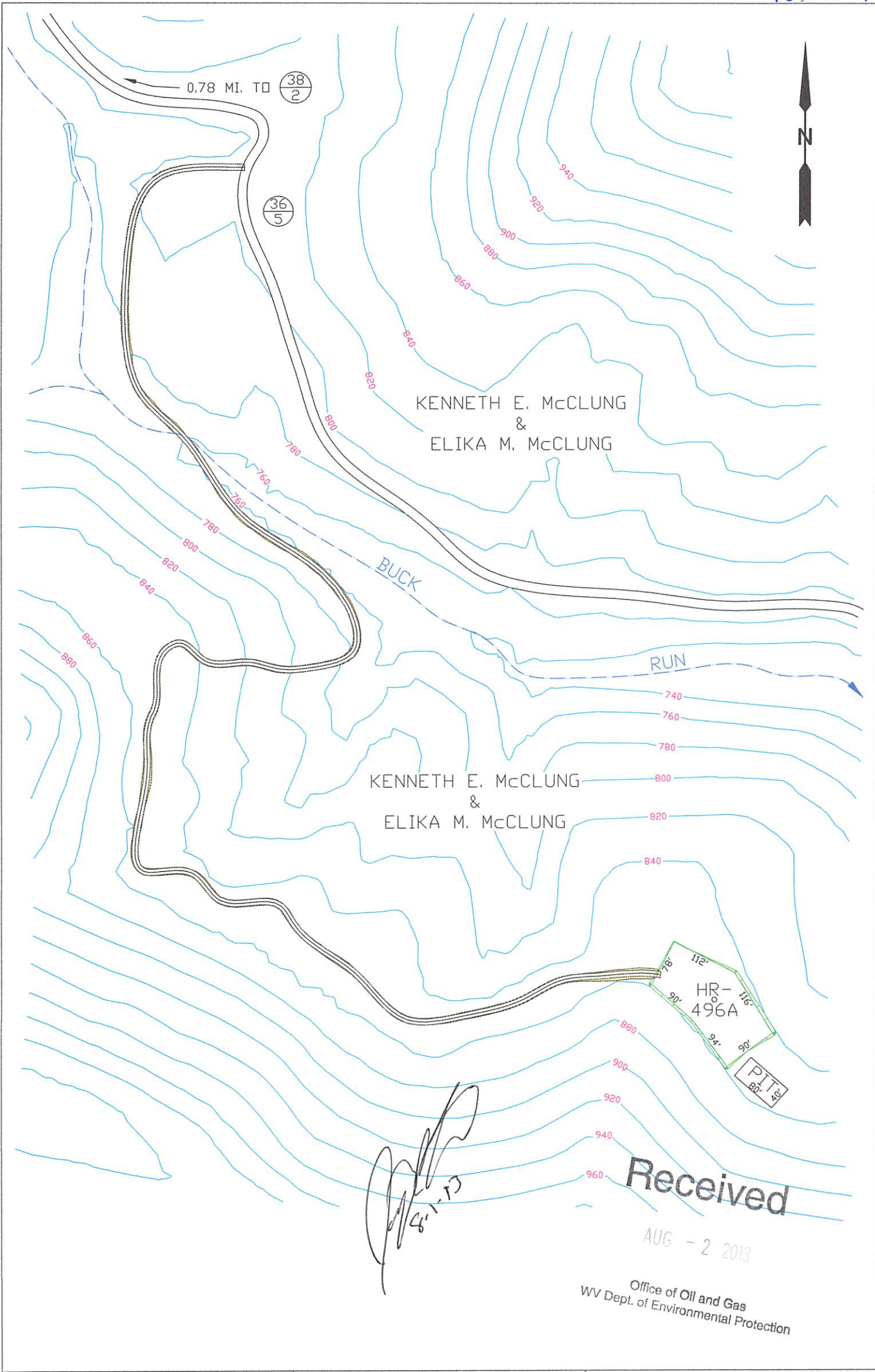
Field Reviewed?

☒ Yes☐ No

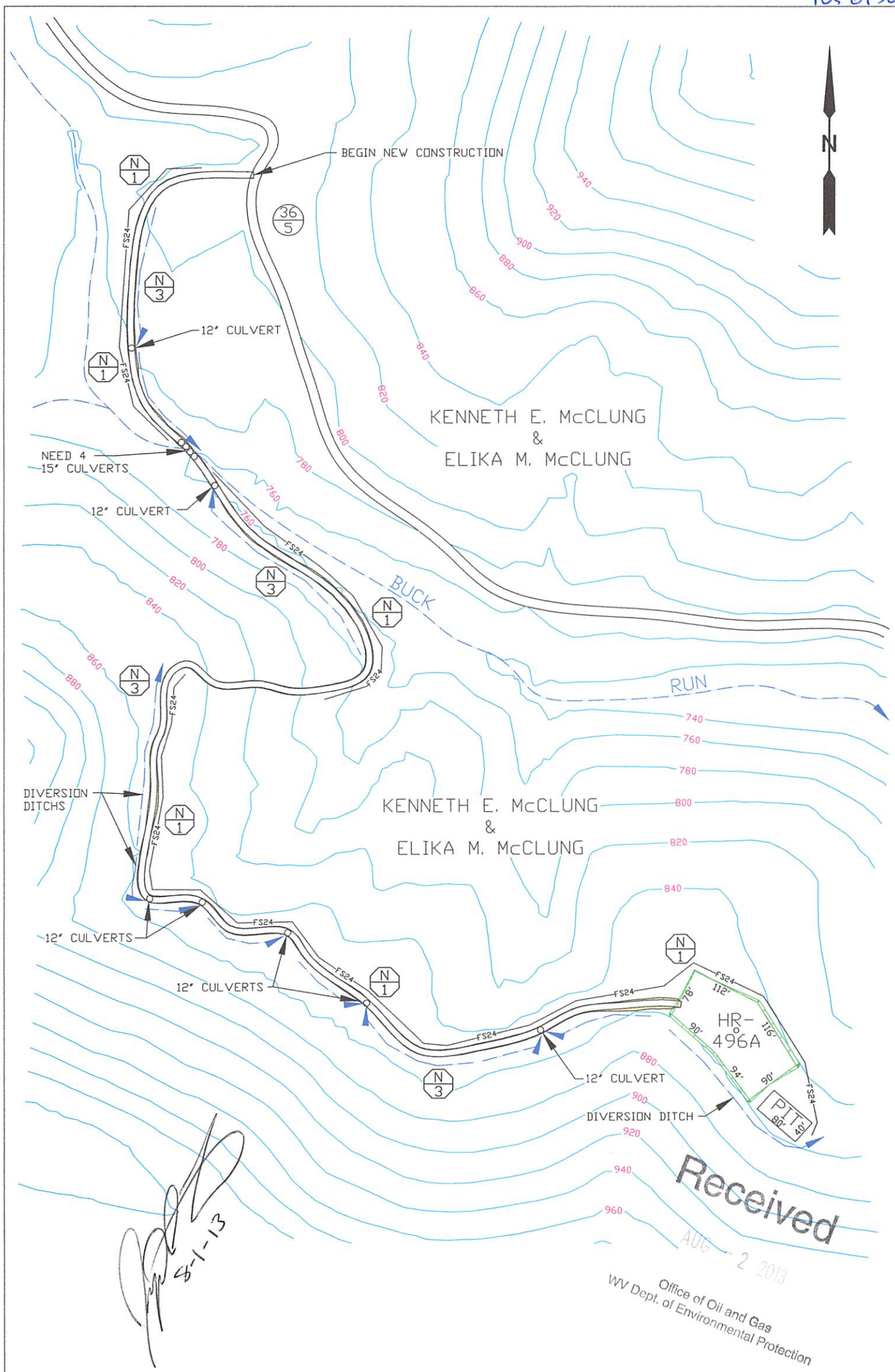
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Office of Oil and Gas
WW Dept. of Environmental Protection

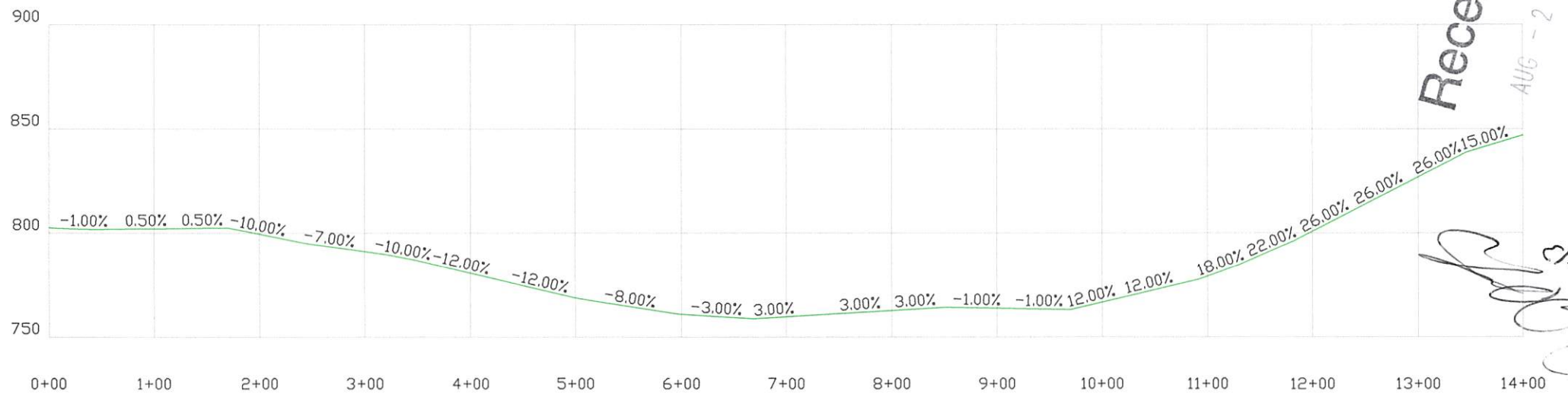


DISTURBED AREAS		LEGEND		SITE PLAN	
WELL PAD CONSTRUCTION	0.49 AC.		STREAM	HARD ROCK EXPLORATION PROPOSED WELL # HR-496A	
NEW ACCESS ROAD CONSTRUCTION	0.73 AC.		PROPERTY LINE	SPRING CREEK DISTRICT, WIRT COUNTY BURNING SPRINGS QUAD, WV 7.5'	
ADDITIONAL CLEARING			SLOPE AREA	JULY 11, 2013	
			WETLAND	TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705	
TOTAL DISTURBED AREA	1.22 AC		BUFFER AREA	PAGE <u>1</u> OF <u>1</u>	



LEGEND			EROSION AND SEDIMENT CONTROL PLAN	
	PROVIDE FLEXTERRA HIGH PERFORMANCE FLEXIBLE GROWTH MEDIUM (HP-FLM) ON CUT AND FILL SLOPES		HARD ROCK EXPLORATION PROPOSED WELL # HR-496A	
	LEVEL SPREADER		SPRING CREEK DISTRICT, WIRT COUNTY BURNING SPRINGS QUAD, WV 7.5'	
	DIVERSION DITCH		JULY 11, 2013	
	BERM OUTLET		TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705	
			PAGE 1 OF 1	
			Office of Oil and Gas WV Dept. of Environmental Protection	

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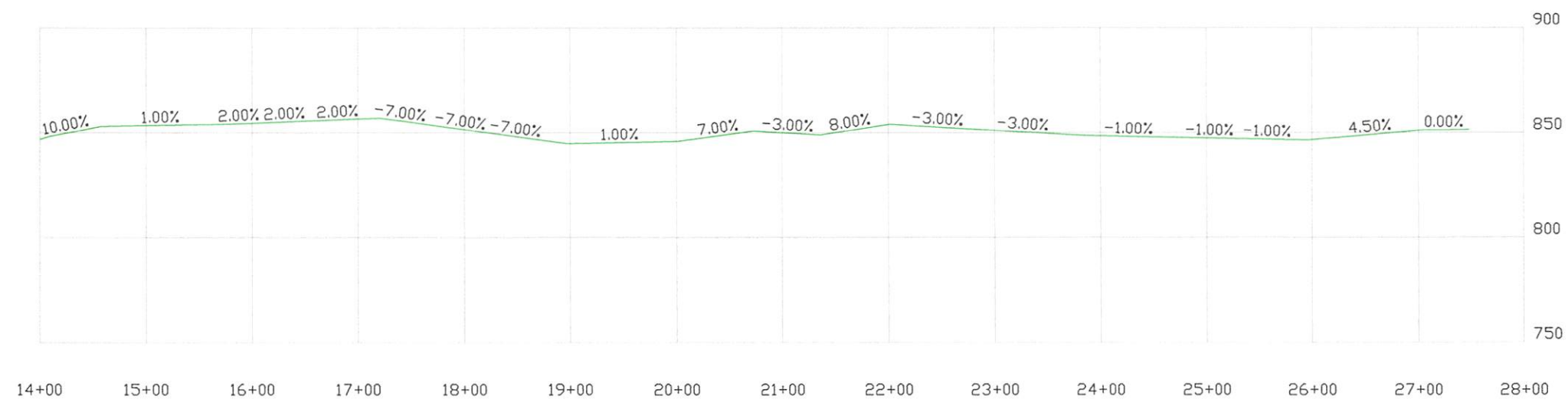


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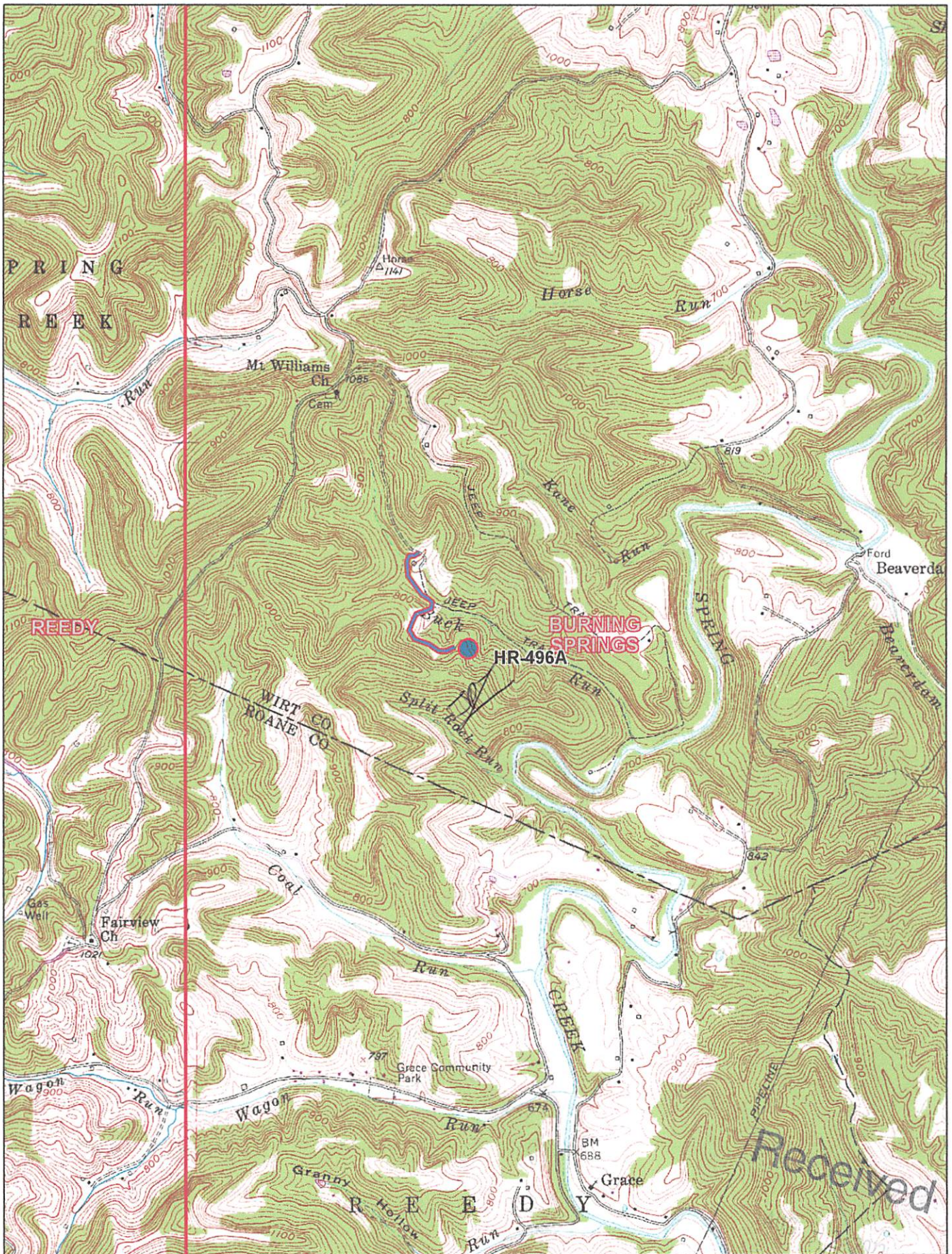
Office of Oil and Gas
WV Dept. of Environmental Protection

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ROAD PROFILE
HARD ROCK EXPLORATION PROPOSED WELL # HR-496A
SPRING CREEK DISTRICT, WIRT COUNTY BURNING SPRINGS QUAD, WV 7.5'
MONTH 11, 2013
TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705
PAGE 1 OF 1

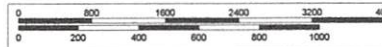




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Zoom Level: 13-0 Datum: NAD27

Scale 1 : 25,000

1" = 2,083 ft



WV Dept of Environmental Protection
Office of Oil and Gas
330 Gas
MN
TN

Received

BOTTOM

SURFACE

7,351'

8,583'

LATITUDE

38°55'

BH 38°57'30"

LONGITUDE

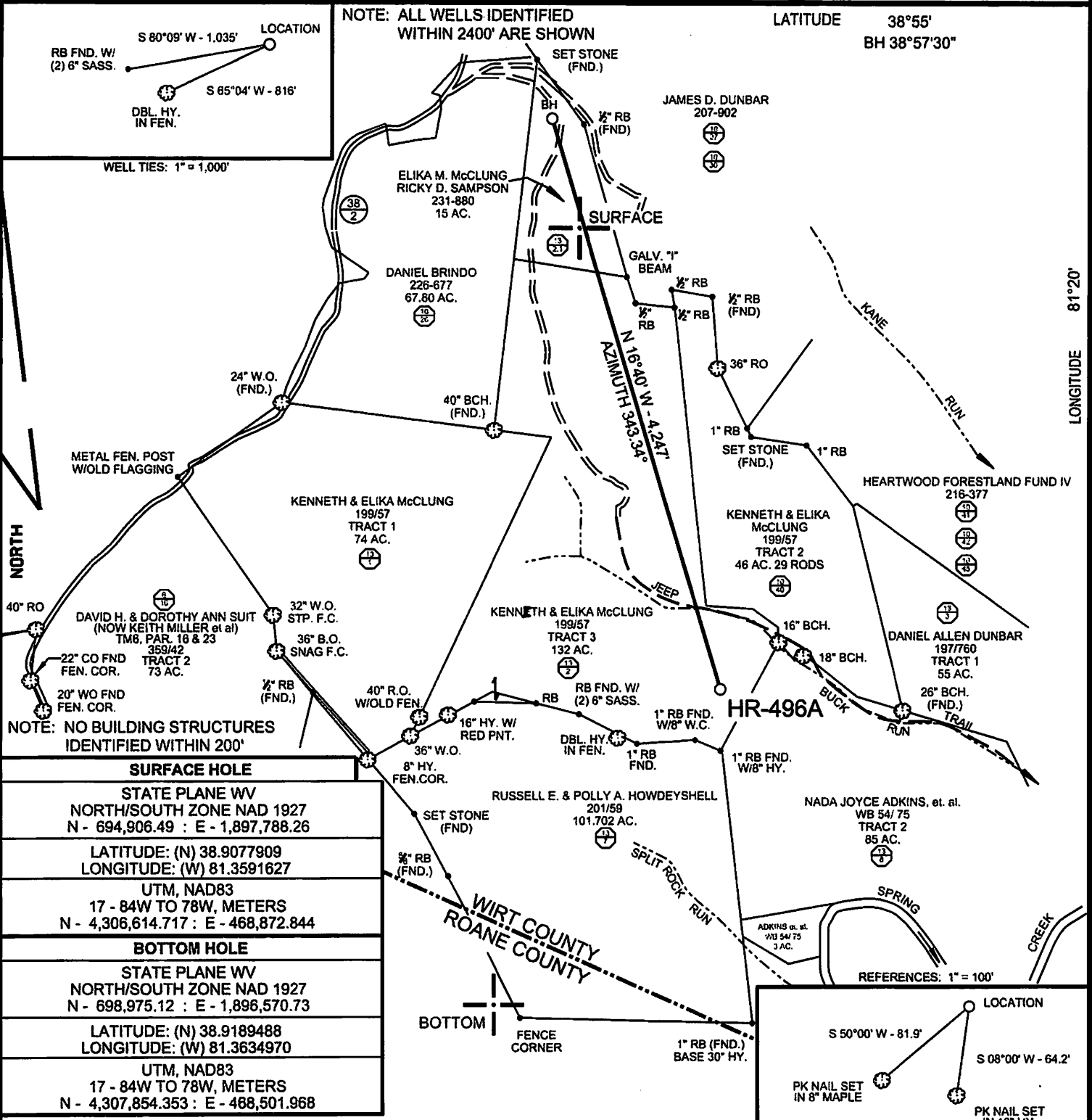
81°20'

3,219'

14,292'

BOTTOM

NOTE: ALL WELLS IDENTIFIED
WITHIN 2400' ARE SHOWN

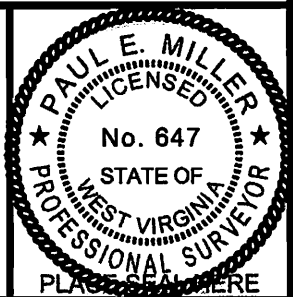


SURFACE HOLE	
STATE PLANE WV NORTH/SOUTH ZONE NAD 1927 N - 694,906.49 : E - 1,897,788.26	
LATITUDE: (N) 38.9077909 LONGITUDE: (W) 81.3591627	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,306,614.717 : E - 468,872.844	
BOTTOM HOLE	
STATE PLANE WV NORTH/SOUTH ZONE NAD 1927 N - 698,975.12 : E - 1,896,570.73	
LATITUDE: (N) 38.9189488 LONGITUDE: (W) 81.3634970	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,307,854.353 : E - 468,501.968	

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO.	HR-496A.DGN
DRAWING NO.	HR-496A
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1:200
PROVEN SOURCE OF ELEVATION	MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT
THIS PLAT IS CORRECT TO THE BEST OF MY
KNOWLEDGE AND BELIEF AND SHOWS ALL THE
INFORMATION REQUIRED BY LAW AND THE REGU-
LATIONS ISSUED AND PRESCRIBED BY THE DEPART-
MENT OF ENVIRONMENTAL PROTECTION.
(SIGNED) Paul E. Miller
R.P.E. _____ L.L.S. _____ 647



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION



DATE JUNE 27, 20 13
OPERATOR'S WELL NO. HR-496A
API WELL NO. _____

WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/>	STATE <u>47</u>	COUNTY <u>105</u>	PERMIT <u>01369 H</u>
(IF "GAS,") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>			
LOCATION: ELEVATION <u>855'</u> WATER SHED <u>BUCK RUN OF SPRING CREEK</u>			
DISTRICT <u>SPRING CREEK</u> COUNTY <u>WIRT</u>			
QUADRANGLE <u>BURNING SPRINGS, WV 7.5'</u>			
SURFACE OWNER <u>KENNETH & ELIKA McCLUNG</u> ACREAGE <u>132</u>			
OIL & GAS ROYALTY OWNER <u>Kenneth & Erika McClung</u> LEASE ACREAGE <u>147</u>			
LEASE NO. _____			
PROPOSED WORK: DRILL <input checked="" type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input checked="" type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____			
PLUG AND ABANDON <input type="checkbox"/> CLEAN OUT AND REPLUG <input type="checkbox"/>			
TARGET FORMATION <u>LOWER HURON</u> ESTIMATED DEPTH <u>8375' MD; 4385' TUD</u>			
WELL OPERATOR <u>HARD ROCK EXPLORATION, INC.</u> DESIGNATED AGENT <u>JAMES L. STEPHENS</u>			
ADDRESS <u>1244 MARTINS BR. ROAD, CHARLESTON, WV 25312</u> ADDRESS <u>SAME</u>			

FORM WW-6

COUNTY NAME

PERMIT